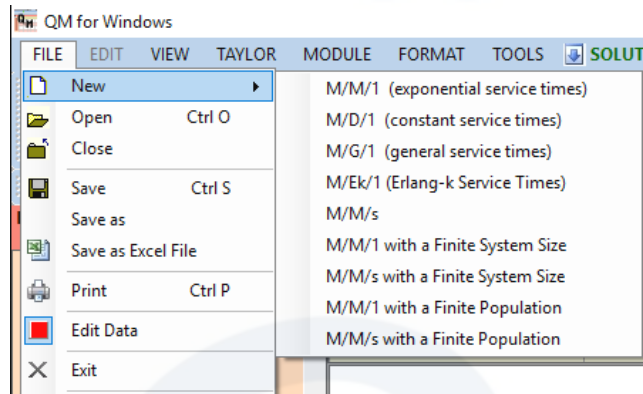


## LAMPIRAN

### Lampiran 1 Cara Menjalankan Simulasi *QM for Windows*

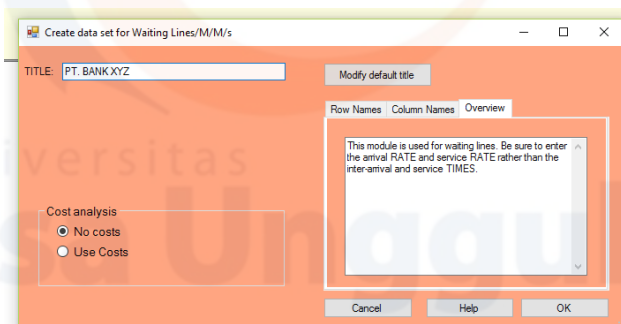
- Terlebih dahulu pilih *Module – Waiting Lines*



Gambar Lampiran 1. Modul model M/M/s

(Sumber : *Software QM for Windows*, 2022)

- Pilih menu *File – New* pilih *Multiple Channel Query System (M/M/s)* akan muncul tampilan sebagai berikut :



Gambar Lampiran 2. Buat kumpulan data untuk garis tunggu model M/M/s

(Sumber : *Software QM for Windows*, 2022)

### Lampiran 2 Data Kedatangan Di PT. Bank XYZ

Data Penelitian Per hari di PT. Bank XYZ

Data Pada hari Senin = 49 Orang

No	Kedatangan	Antar Kedatangan
1	9:00	
2	9:03	0:03
3	9:04	0:01
4	9:05	0:01
5	9:08	0:03
6	9:09	0:01
7	9:10	0:01
8	9:13	0:03
9	9:15	0:02
10	9:18	0:03
11	9:19	0:01
12	9:21	0:02
13	9:22	0:01
14	9:22	0:00
15	9:29	0:07
16	9:30	0:01
17	9:31	0:01
18	9:31	0:00
19	9:32	0:01
20	9:40	0:08
21	9:45	0:05
22	10:01	0:16
23	10:04	0:03
24	10:05	0:01
25	10:12	0:07
26	10:18	0:06
27	10:20	0:02
28	10:21	0:01
29	10:24	0:03
30	13:02	2:38
31	13:03	0:01
32	13:09	0:06
33	13:09	0:00
34	13:13	0:04
35	13:13	0:00
36	13:17	0:04
37	13:18	0:01
38	13:18	0:00
39	13:21	0:03
40	13:22	0:01
41	13:26	0:04
42	13:27	0:01

43	13:30	0:03
44	13:31	0:01
45	13:36	0:05
46	13:50	0:14
47	14:00	0:10
48	14:10	0:10
49	14:16	0:06

Data Penelitian Per hari di PT. Bank XYZ

Data Pada hari Selasa = 64 Orang

No	Kedatangan	Antar Kedatangan
1	9:00	
2	9:00	0:00
3	9:03	0:03
4	9:03	0:00
5	9:03	0:00
6	9:04	0:01
7	9:09	0:05
8	9:10	0:01
9	9:13	0:03
10	9:13	0:00
11	9:18	0:05
12	9:19	0:01
13	9:21	0:02
14	9:22	0:01
15	9:26	0:04
16	9:29	0:03
17	9:31	0:02
18	9:32	0:01
19	9:33	0:01
20	9:41	0:08
21	9:41	0:00
22	9:42	0:01
23	9:47	0:05
24	9:50	0:03
25	9:55	0:05
26	10:00	0:05
27	10:12	0:12
28	10:12	0:00
29	10:13	0:01
30	10:17	0:04
31	10:20	0:03

32	10:22	0:02
33	10:26	0:04
34	13:00	2:34
35	13:00	0:00
36	13:03	0:03
37	13:03	0:00
38	13:04	0:01
39	13:04	0:00
40	13:09	0:05
41	13:09	0:00
42	13:13	0:04
43	13:13	0:00
44	13:19	0:06
45	13:19	0:00
46	13:22	0:03
47	13:22	0:00
48	13:29	0:07
49	13:29	0:00
50	13:31	0:02
51	13:31	0:00
52	13:32	0:01
53	13:40	0:08
54	13:40	0:00
55	13:50	0:10
56	13:50	0:00
57	14:00	0:10
58	14:00	0:00
59	14:12	0:12
60	14:12	0:00
61	14:13	0:01
62	14:13	0:00
63	14:19	0:06
64	14:19	0:00

Data Penelitian Per hari di PT. Bank XYZ

Data Pada hari Rabu = 54 Orang

No	Kedatangan	Antar Kedatangan
1	9:02	
2	9:03	0:01
3	9:10	0:07
4	9:13	0:03
5	9:14	0:01

6	9:20	0:06
7	9:20	0:00
8	9:30	0:10
9	9:30	0:00
10	9:32	0:02
11	9:35	0:03
12	9:39	0:04
13	9:40	0:01
14	9:40	0:00
15	9:40	0:00
16	9:42	0:02
17	9:45	0:03
18	9:45	0:00
19	9:45	0:00
20	9:47	0:02
21	9:47	0:00
22	9:48	0:01
23	9:49	0:01
24	13:01	3:12
25	13:02	0:01
26	13:10	0:08
27	13:10	0:00
28	13:10	0:00
29	13:13	0:03
30	13:13	0:00
31	13:20	0:07
32	13:20	0:00
33	13:30	0:10
34	13:30	0:00
35	13:40	0:10
36	13:40	0:00
37	13:42	0:02
38	13:42	0:00
39	13:45	0:03
40	13:45	0:00
41	13:45	0:00
42	13:45	0:00
43	13:47	0:02
44	13:47	0:00
45	13:48	0:01
46	13:48	0:00
47	13:49	0:01
48	13:49	0:00

49	13:55	0:06
50	13:55	0:00
51	14:02	0:07
52	14:02	0:00
53	14:05	0:03
54	14:05	0:00

Data Penelitian Per hari di PT. Bank XYZ

Data Pada hari Kamis = 41 Orang

No	Kedatangan	Antar Kedatangan
1	9:01	
2	9:04	0:03
3	9:09	0:05
4	9:10	0:01
5	9:13	0:03
6	9:14	0:01
7	9:16	0:02
8	9:20	0:04
9	9:22	0:02
10	9:23	0:01
11	9:30	0:07
12	9:30	0:00
13	9:32	0:02
14	9:32	0:00
15	9:35	0:03
16	9:35	0:00
17	9:39	0:04
18	9:40	0:01
19	9:40	0:00
20	9:42	0:02
21	9:45	0:03
22	9:45	0:00
23	9:46	0:01
24	9:47	0:01
25	10:03	0:16
26	13:05	3:02
27	13:06	0:01
28	13:09	0:03
29	13:11	0:02
30	13:13	0:02
31	13:13	0:00
32	13:20	0:07

33	13:30	0:10
34	13:30	0:00
35	13:30	0:00
36	13:40	0:10
37	13:45	0:05
38	14:00	0:15
39	14:10	0:10
40	14:10	0:00
41	14:35	0:25

Data Penelitian Per hari di PT. Bank XYZ

Data Pada hari jumat = 44 Orang

No	Kedatangan	Antar Kedatangan
1	9:00	
2	9:02	0:02
3	9:09	0:07
4	9:09	0:00
5	9:14	0:05
6	9:17	0:03
7	9:20	0:03
8	9:21	0:01
9	9:23	0:02
10	9:26	0:03
11	9:29	0:03
12	9:30	0:01
13	9:32	0:02
14	9:33	0:01
15	9:34	0:01
16	9:40	0:06
17	9:40	0:00
18	9:40	0:00
19	9:42	0:02
20	9:50	0:08
21	9:50	0:00
22	9:53	0:03
23	9:54	0:01
24	10:05	0:11
25	10:15	0:10
26	13:05	2:50
27	13:06	0:01
28	13:08	0:02
29	13:08	0:00

30	13:11	0:03
31	13:11	0:00
32	13:15	0:04
33	13:20	0:05
34	13:22	0:02
35	13:25	0:03
36	13:25	0:00
37	13:35	0:10
38	13:37	0:02
39	13:45	0:08
40	13:50	0:05
41	14:00	0:10
42	14:05	0:05
43	14:11	0:06
44	14:17	0:06

Data Penelitian Per hari di PT. Bank XYZ

Data Pada hari Senin = 48 Orang

No	Kedatangan	Antar Kedatangan
1	9:00	
2	9:04	0:04
3	9:04	0:00
4	9:05	0:01
5	9:12	0:07
6	9:14	0:02
7	9:18	0:04
8	9:20	0:02
9	9:20	0:00
10	9:23	0:03
11	9:23	0:00
12	9:30	0:07
13	9:30	0:00
14	9:33	0:03
15	9:35	0:02
16	9:36	0:01
17	9:39	0:03
18	9:42	0:03
19	9:50	0:08
20	9:50	0:00
21	10:01	0:11
22	10:12	0:11
23	10:12	0:00



24	10:20	0:08
25	10:27	0:07
26	13:02	2:35
27	13:03	0:01
28	13:08	0:05
29	13:09	0:01
30	13:10	0:01
31	13:13	0:03
32	13:20	0:07
33	13:24	0:04
34	13:25	0:01
35	13:28	0:03
36	13:30	0:02
37	13:32	0:02
38	13:37	0:05
39	13:40	0:03
40	13:40	0:00
41	13:43	0:03
42	13:52	0:09
43	13:55	0:03
44	14:00	0:05
45	14:05	0:05
46	14:05	0:00
47	14:10	0:05
48	14:15	0:05

Data Penelitian Per hari di PT. Bank XYZ  
 Data Pada hari Selasa = 42 Orang

No	Kedatangan	Antar Kedatangan
1	9:02	
2	9:05	0:03
3	9:09	0:04
4	9:09	0:00
5	9:13	0:04
6	9:13	0:00
7	9:17	0:04
8	9:21	0:04
9	9:22	0:01
10	9:25	0:03
11	9:25	0:00
12	9:28	0:03
13	9:29	0:01

14	9:33	0:04
15	9:34	0:01
16	9:36	0:02
17	9:39	0:03
18	10:01	0:22
19	10:05	0:04
20	10:15	0:10
21	13:00	2:45
22	13:03	0:03
23	13:04	0:01
24	13:08	0:04
25	13:10	0:02
26	13:12	0:02
27	13:15	0:03
28	13:18	0:03
29	13:20	0:02
30	13:20	0:00
31	13:25	0:05
32	13:26	0:01
33	13:30	0:04
34	13:35	0:05
35	13:40	0:05
36	13:40	0:00
37	13:48	0:08
38	13:51	0:03
39	13:55	0:04
40	14:01	0:06
41	14:01	0:00
42	14:18	0:17

Lampiran 3 Data Pelayanan Di PT. Bank XYZ

Data Penelitian Per hari di PT. Bank XYZ

Data Pada hari Senin = 49 Orang

Teller 1 = 25

Orang

No	Pelayanan	Selesai Pelayanan	Lama Pelayanan (menit)
1	9:05	9:12	7
2	9:13	9:20	7
3	9:21	9:26	5
4	9:27	9:35	8
5	9:36	9:42	6

6	9:43	9:50	7
7	9:51	10:02	11
8	10:03	10:08	5
9	10:08	10:15	7
10	10:16	10:23	7
11	10:23	10:33	10
12	10:34	10:39	5
13	10:39	10:44	5
14	10:45	10:52	7
15	10:53	11:00	7
16	13:05	13:13	8
17	13:14	13:24	10
18	13:24	13:31	7
19	13:31	13:39	8
20	13:40	13:45	5
21	13:46	13:52	6
22	13:53	14:03	10
23	14:04	14:13	9
24	14:14	14:25	11
25	14:26	14:33	7
Rata - Rata			7.40

Teller 2 = 24

Orang

No	Pelayanan	Selesai Pelayanan	Lama Pelayanan (menit)
1	9:00	9:10	10
2	9:11	9:20	9
3	9:21	9:27	6
4	9:28	9:35	7
5	9:36	9:42	6
6	9:42	9:50	8
7	9:51	9:59	8
8	10:00	10:07	7
9	10:07	10:15	8
10	10:16	10:22	6
11	10:23	10:32	9
12	10:32	10:37	5
13	10:38	10:44	6
14	10:45	10:53	8
15	13:10	13:18	8
16	13:18	13:23	5
17	13:24	13:30	6
18	13:31	13:40	9

19	13:40	13:49	9
20	13:50	13:57	7
21	13:55	14:05	7
22	14:06	14:15	9
23	14:16	14:22	6
24	14:23	14:31	8
Rata - Rata			7.38

Data Penelitian Per hari di PT. Bank XYZ

Data Pada hari Selasa = 64 Orang

Teller 1 = 32

Orang

No	Pelayanan	Selesai Pelayanan	Lama Pelayanan (menit)
1	9:00	9:10	10
2	9:11	9:20	9
3	9:21	9:28	7
4	9:28	9:36	8
5	9:37	9:42	5
6	9:42	9:50	8
7	9:51	9:59	8
8	10:00	10:06	6
9	10:07	10:16	9
10	10:16	10:23	7
11	10:24	10:31	7
12	10:32	10:38	6
13	10:39	10:44	5
14	10:44	10:50	6
15	10:50	10:55	5
16	10:56	11:00	4
17	13:05	13:10	5
18	13:11	13:20	9
19	13:21	13:27	6
20	13:28	13:35	7
21	13:36	13:42	6
22	13:42	13:50	8
23	13:51	13:59	8
24	14:00	14:07	7
25	14:07	14:15	8
26	14:16	14:22	6
27	14:23	14:32	9
28	14:32	14:37	5

29	14:38	14:44	6
30	14:45	14:50	5
31	14:50	14:55	5
32	14:55	15:00	5
Rata - Rata			6.72

Teller 2 = 32

Orang

No	Pelayanan	Selesai Pelayanan	Lama Pelayanan (menit)
1	9:03	9:11	8
2	9:11	9:20	9
3	9:21	9:27	6
4	9:28	9:35	7
5	9:36	9:42	6
6	9:42	9:50	8
7	9:51	9:59	8
8	10:00	10:07	7
9	10:07	10:15	8
10	10:16	10:22	6
11	10:23	10:28	5
12	10:29	10:35	6
13	10:35	10:44	9
14	10:44	10:49	5
15	10:49	10:55	6
16	10:55	11:00	5
17	13:01	13:07	6
18	13:08	13:14	6
19	13:15	13:23	8
20	13:24	13:35	11
21	13:36	13:41	5
22	13:42	13:46	4
23	13:47	13:52	5
24	13:53	14:00	7
25	14:01	14:11	10
26	14:12	14:20	8
27	14:21	14:28	7
28	14:28	14:37	9
29	14:38	14:43	5
30	14:44	14:50	6
31	14:50	14:55	5
32	14:55	15:04	9
Rata - Rata			6.88

Data Penelitian Per hari di PT. Bank XYZ

Data Pada hari Rabu = 54 Orang

Teller 1 = 27

Orang

No	Pelayanan	Selesai Pelayanan	Lama Pelayanan (menit)
1	9:02	9:18	16
2	9:19	9:30	11
3	9:31	9:39	8
4	9:41	9:48	7
5	9:49	9:55	6
6	9:56	10:02	6
7	10:03	10:10	7
8	10:11	10:20	9
9	10:21	10:27	6
10	10:28	10:37	9
11	10:38	10:46	8
12	10:47	10:58	11
13	13:02	13:10	8
14	13:11	13:20	9
15	13:21	13:30	10
16	13:31	13:40	9
17	13:41	13:47	6
18	13:48	13:56	8
19	13:57	14:06	9
20	14:06	14:10	4
21	14:11	14:16	5
22	14:16	14:21	5
23	14:22	14:29	7
24	14:30	14:35	5
25	14:36	14:40	4
26	14:41	14:49	8
27	14:50	15:00	10
Rata - Rata			7.81

Teller 2 = 27 Orang

No	Pelayanan	Selesai Pelayanan	Lama Pelayanan (menit)
1	9:03	9:17	14
2	9:18	9:26	8
3	9:27	9:34	7
4	9:35	9:42	7
5	9:43	9:49	6
6	9:50	10:00	10

7	10:01	10:17	16
8	10:18	10:25	7
9	10:26	10:34	8
10	10:36	10:42	6
11	10:43	10:50	7
12	10:51	11:00	9
13	13:01	13:10	9
14	13:11	13:19	8
15	13:20	13:26	6
16	13:27	13:32	5
17	13:32	13:40	8
18	13:41	13:51	10
19	13:52	14:01	9
20	14:02	14:09	7
21	14:10	14:15	5
22	14:16	14:23	7
23	14:24	14:30	6
24	14:30	14:37	7
25	14:37	14:44	7
26	14:44	14:50	6
27	14:52	15:00	8
Rata - Rata			7.89

Data Penelitian Per hari di PT. Bank XYZ

Data Pada hari Kamis = 41

Orang

Teller 1 = 20

Orang

No	Pelayanan	Selesai Pelayanan	Lama Pelayanan (menit)
1	9:04	9:18	14
2	9:20	9:26	6
3	9:28	9:35	7
4	9:36	9:47	11
5	9:48	9:53	5
6	9:54	10:04	10
7	10:05	10:12	7
8	10:18	10:25	7
9	10:26	10:34	8
10	10:36	10:42	6
11	10:43	10:50	7
12	10:51	11:00	9
13	13:10	13:17	7

14	13:15	13:23	8
15	13:16	13:23	7
16	13:24	13:34	10
17	13:40	13:49	9
18	14:01	14:09	8
19	14:10	14:17	7
20	14:19	14:25	6
Rata - Rata			7.95

Teller 2 = 21

Orang

No	Pelayanan	Selesai Pelayanan	Lama Pelayanan (menit)
1	9:01	9:10	9
2	9:11	9:19	8
3	9:20	9:26	6
4	9:27	9:34	7
5	9:35	9:43	8
6	9:44	9:50	6
7	9:51	9:59	8
8	10:00	10:13	13
9	10:14	10:21	7
10	10:21	10:28	7
11	10:29	10:35	6
12	10:36	10:42	6
13	10:42	10:53	11
14	13:11	13:19	8
15	13:20	13:26	6
16	13:27	13:35	8
17	13:37	13:44	7
18	13:47	13:54	7
19	13:56	14:11	5
20	14:12	14:20	8
21	14:36	14:46	10
Rata - Rata			7.67

Data Penelitian Per hari di PT. Bank XYZ

Data Pada hari jumat = 44

Orang

Teller 1 = 23

Orang

No	Pelayanan	Selesai Pelayanan	Lama Pelayanan (menit)
1	9:00	9:05	5



2	9:11	9:15	4
3	9:21	9:26	5
4	9:30	9:36	6
5	9:37	9:39	2
6	9:44	9:47	3
7	10:01	10:05	4
8	10:11	10:17	6
9	10:18	10:24	6
10	10:25	10:28	3
11	10:31	10:35	4
12	10:40	10:43	3
13	10:51	10:55	4
14	13:11	13:14	3
15	13:20	13:24	4
16	13:28	13:31	3
17	13:40	13:46	6
18	13:47	13:51	4
19	13:55	13:58	3
20	14:04	14:11	7
21	14:13	14:20	7
22	14:22	14:28	6
23	14:32	14:37	5
Rata - Rata			4.48

Teller 2 = 21  
Orang

No	Pelayanan	Selesai Pelayanan	Lama Pelayanan (menit)
1	9:02	9:05	3
2	9:13	9:16	3
3	9:21	9:27	6
4	9:28	9:33	5
5	9:33	9:36	3
6	9:41	9:44	3
7	9:48	9:53	5
8	9:54	10:00	6
9	10:01	10:07	6
10	10:08	10:12	4
11	10:16	10:19	3
12	10:26	10:30	4
13	13:12	13:15	3
14	13:14	21:21	7
15	13:18	13:22	4
16	13:25	13:32	7

17	13:33	13:37	4
18	13:41	13:44	3
19	13:50	13:53	3
20	14:03	14:11	8
21	14:13	14:16	3
Rata - Rata			4.43

Data Penelitian Per hari di PT. Bank XYZ

Data Pada hari Senin = 48

Orang

Teller 1 = 25

Orang

No	Pelayanan	Selesai Pelayanan	Lama Pelayanan (menit)
1	9:04	9:10	6
2	9:11	9:19	8
3	9:20	9:26	6
4	9:27	9:32	5
5	9:33	9:40	7
6	9:41	9:48	7
7	9:49	9:58	9
8	10:01	10:10	9
9	10:11	10:18	7
10	10:19	10:25	6
11	10:26	10:33	7
12	10:34	10:42	8
13	10:43	10:51	8
14	13:06	13:14	8
15	13:15	13:23	8
16	13:24	13:33	9
17	13:34	13:45	11
18	13:46	13:51	5
19	13:52	13:58	6
20	13:59	14:05	6
21	14:06	14:14	8
22	14:15	14:20	5
23	14:21	14:28	7
24	14:29	14:34	5
25	14:35	14:44	9
Rata - Rata			7.20

Teller 2 = 23

Orang

No	Pelayanan	Selesai Pelayanan	Lama Pelayanan (menit)
1	9:00	9:11	11
2	9:11	9:20	9
3	9:21	9:28	7
4	9:29	9:36	7
5	9:37	9:43	6
6	9:42	9:50	8
7	9:51	9:56	5
8	9:57	10:03	6
9	10:03	10:11	8
10	10:12	10:19	7
11	10:21	10:28	7
12	10:30	10:39	9
13	13:06	13:14	8
14	13:15	13:20	5
15	13:21	13:28	7
16	13:29	13:34	5
17	13:35	13:42	7
18	13:43	13:50	7
19	13:51	14:00	9
20	14:01	14:10	9
21	14:11	14:15	4
22	14:16	14:22	6
23	14:23	14:30	7
Rata - Rata			7.13

Data Penelitian Per hari di PT. Bank XYZ

Data Pada hari Selasa = 42

Orang

Teller 1 = 22

Orang

No	Pelayanan	Selesai Pelayanan	Lama Pelayanan (menit)
1	9:02	9:11	9
2	9:12	9:20	8
3	9:21	9:27	6
4	9:28	9:34	6
5	9:35	9:42	7
6	9:43	9:50	7
7	9:51	10:01	10
8	10:02	10:11	9
9	10:12	10:20	8

10	10:21	10:30	9
11	10:31	10:42	11
12	13:00	13:05	5
13	13:06	13:12	6
14	13:13	13:20	7
15	13:21	13:25	4
16	13:26	13:37	11
17	13:38	13:45	7
18	13:46	13:50	4
19	13:51	14:00	9
20	14:01	14:10	9
21	14:11	14:15	4
22	14:16	14:25	9
Rata - Rata			7.50

Teller 2 = 20

Orang

No	Pelayanan	Selesai Pelayanan	Lama Pelayanan (menit)
1	9:05	9:17	12
2	9:15	9:23	8
3	9:16	9:23	7
4	9:24	9:33	9
5	9:35	9:44	9
6	9:45	9:52	7
7	9:53	10:02	9
8	10:03	10:12	9
9	10:13	10:21	8
10	13:06	13:10	4
11	13:11	13:19	8
12	13:20	13:25	5
13	13:26	13:32	6
14	13:33	13:39	6
15	13:40	13:48	8
16	13:49	13:59	10
17	14:00	14:14	14
18	14:15	14:22	7
19	14:23	14:30	7
20	14:31	14:40	9
Rata - Rata			8.10